

Coral bleaching threatens 73 percent of world's reefs

Mark Wilson
14 August 2024

Record-breaking ocean temperatures have induced an ongoing mass bleaching event that puts almost three quarters of the world's coral reefs at risk, the US National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Watch reported last month.

This is a further warning of the climate crisis, with the working class and poor across the world bearing the primary brunt of its consequences as global temperatures rise, including in the oceans.

The current global coral bleaching event (GCBE4) is the fourth on record, lasting since February 2023. The NOAA announced it officially in April 2024. The bleaching has affected coral reefs in every major ocean basin and almost 70 countries, including the US (particularly in Florida), Brazil, Panama, Costa Rica, Tuvalu, Fiji and Australia.

Coral bleaching occurs when the corals are no longer able to support vital symbiotic micro-organisms called zooxanthellae. These zooxanthellae algae provide critical nutrients for the coral, without which it cannot survive for long. When the surrounding water temperatures reach higher than the thermal limit allowing for that symbiotic relationship, the coral expels the algae and turns the organism white, a process known as bleaching.

The last such event—GCBE3—occurred from 2014 to 2017, and affected 65.7 percent of the world's coral reefs. GCBE4 has, as of the latest figures from mid-July, placed 72.9 percent of coral reefs at risk of bleaching. This makes it the most widespread on record. It is well on its way to becoming the most severe, with NOAA having to introduce three additional new heat alert levels since GCBE3.

As one example, the Great Barrier Reef (GBR) in Australia—the largest coral reef in the world—has been affected as part of GCBE4. In 2016, the WSWS warned

of the implications of the devastating mass bleaching event of that year, which claimed almost 70 percent of the GBR's shallow-water coral.

Since then, four mass bleaching events have wreaked havoc on the GBR's health, with the latest event shaping up to be the most catastrophic of all. A recent paper published in *Nature* found that GBR ocean temperatures are higher than at any point in the past 400 years. It stated: "The existential threat to the GBR ecosystem from anthropogenic [human-induced] climate change is now realised."

August 2023 marked an all-time high for global sea surface temperature (SST) at 20.98°C. Those temperatures have continued, with June 2024 measurements coming in at 20.85°C. On average, the Earth's oceans have warmed around 0.88°C since 1850 levels.

This latest global catastrophe confirms years of warnings by scientists that coral reefs would be increasingly devastated by climate change-induced heat stress. For instance, a 2007 paper published in the journal *Science* stated that corals would become "increasingly rare on reef systems" due to the global warming expected throughout the 21st century. The authors warned: "Decisive action on global emissions is required if the loss of coral-dominated ecosystems is to be avoided."

Despite the role played by natural climate variations such as the El Niño Southern Oscillation in these high temperatures, there is no scientific doubt that the primary cause is greenhouse gas-induced climate change from the burning of fossil fuels.

The health of coral reef systems is vital to the ecological functioning of the planet as a whole. Coral reefs are home to 25 percent of all marine species. Moreover, approximately six million people around the

world, largely in impoverished countries, depend on coral reef fisheries for their livelihoods.

These ecosystems also play a vital role in minimising other environmental impacts to millions of people around the world. Coral reefs absorb the worst impacts of storms and floodings in the world's coastal zones. Globally, 100 to 200 million people living in these communities are at least partially protected from such hazards by coral reefs.

With warmer temperatures caused by climate change, bleaching events like this have become five times more frequent than they were four to five decades ago. This reduces the time between bleaching events in which corals could otherwise recover.

Dr Emma Camp, the leader of the Future Reefs Team at the University of Technology Sydney, explained: "If given a chance, coral are actually resilient and can recover. But as bleaching becomes more frequent and stronger in intensity, we're really narrowing that window."

These climate events, already a cause for great concern by the world's scientists and the population at large, are occurring at approximately 1% of global warming. On the basis of totally inadequate government pledges, the world is on track for warming of 3% above pre-industrial levels by the end of the century.

The UN Intergovernmental Panel on Climate Change (IPCC) Working Group II report from 2022, which synthesised over 34,000 peer-reviewed publications, concluded that warming of over 2% is enough to threaten over 99 percent of coral reefs with severe damage.

Far from taking the appropriate action necessary for climate change mitigation, the ruling classes around the world have rejected any program that would save coral reefs. The Center for American Progress recently reviewed public statements from all sitting members of the US Congress. It found that 23 percent "publicly deny the scientific consensus of human-caused climate change." Many, including House Speaker Mike Johnson, receive hundreds of thousands of dollars of donations from oil and gas companies.

But climate change cannot be attributed primarily to the short-sightedness and corruption of individual politicians, parties, or even governments at large. The root cause of climate change is the capitalist mode of

production, which subordinates all social needs to private profit and divides the world into rival nation-states.

A study published earlier this year by global consulting firm ICF estimated that a person born in 2024 in the US could lose up to \$1 million from the effects of climate change over their lifetime. Current and future generations of people would increasingly face more "difficult decisions about how to pay for food, housing, and other daily expenses."

This average figure disguises the unequal cost inflicted on working people, who are most exposed to the impact.

Meanwhile, fossil fuel conglomerates such as BP, Shell, and ExxonMobil collectively rake in hundreds of billions of dollars in profits every year. Much of that wealth, beyond being hoarded by a small financial elite, is used to purchase stock buybacks and enrich their investors. Climate change is, in the final analysis, an issue that once again shows the class divide driving the threat to human civilisation.

The crucial lesson to be drawn from the bleaching event, the overall danger of climate change and the response of governments is that the capitalist classes are incapable of staving off the ecological catastrophe. Only a unified movement of the international working class to overthrow the profit system and reorganise society on a socialist basis can adequately preserve these critical ecosystems and avert a planetary disaster.



To contact the WSWs and the Socialist Equality Party visit:

[wsws.org/contact](https://www.wsws.org/contact)